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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.

EXAMINER	
ART UNIT	PAPER NUMBER
	31

DATE MAILED:

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary	Application No. 09/126,945	Applicant(s) LIBERMANN ET AL.
	Examiner Scott Priebe	Art Unit 1632

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *24 July 2001*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *24-39,43-100,105-139 and 141-156* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☒ Claim(s) *75-78,80,83,121-124,126,128-131,133,136-139,141-143,145,148 and 156* is/are allowed.

6)☒ Claim(s) *24-26,28,29,31,32,34,35,37,38,43-53,55,56,58,59,61,62,64,65,67-74,79,81,82,84,99,100,105,107,109,111,113-120,125 and 127*, 132, 134, 135, 144, 146, 147, 149-155 is/are rejected.

7)☒ Claim(s) *27,30,33,36,39,54,57,60,63,66,85-98,106,108,110 and 112* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11)☐ The proposed drawing correction filed on _____ is: a)☐ approved b)☐ disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12)☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

13)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

14)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a)☐ The translation of the foreign language provisional application has been received.

15)☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

DETAILED ACTION

The amendment filed 7/24/01 has been entered. Claims 24, 51, 105, 107, 109, 111, 128, 137, and 154 have been amended; claim 156 has been added.

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claim Rejections - 35 USC § 112

Claims 24-26, 28-29, 31-32, 34-35, 37-38, 43-53, 55-56, 58-59, 61-62, 64-65, 67-74, 79, 81-82, 105, 107, 109, 111, 113-120, 125, 127, 132, 134-135, 144, 146-147 and 149-155 remain rejected under 35 U.S.C. 112, first paragraph, for the reasons set forth in the Office action of 4/24/01, as containing subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention.

Applicant's arguments filed 7/24/01 have been fully considered but they are not persuasive.

Regarding claims 24, 51, 105, 107, and 111 (and their dependent claims), the specification at page 16 discloses in a general discussion of prior art that deletion of amino acids from the N-terminus or C-terminus of a polypeptide would retain the property of inducing antibodies that would also bind the complete polypeptide. It does not suggest that a polypeptide having up to 10% of it residues substituted would retain such a property. More importantly, it does not indicate that such embodiments were considered to be embraced by the invention as originally

described. The remainder of page 16 describes prior art and strategies to obtain mutants of SEQ ID NO: 2 to identify which residues are important for protein function, not that are important for making antibodies that would bind to SEQ ID NO: 2. Applicant is respectfully reminded that subject matter disclosed in discussion of prior art does not constitute a description of the invention, *Tronzo v. Biomet*, 47 USPQ2d 1829, 1833 (CA FC 1998).

Regarding claims 46, 48, 70, 72, 79, 81, 116, 118, 125, 127, 132, 134, 144, 146 (and claims dependent therefrom), the primary issue here is the unlimited breadth of "heterologous regulatory sequence" in the context of these amended claims in contrast to the original disclosure. While the original disclosure describes a variety of sequence elements for transcription and translation, only regulatable promoters would fall within the class of "heterologous regulatory sequence". The original specification discloses no "regulatory elements" for regulation of translation. Page 1, lines 13-18 discusses prior art, not the invention, and is discussing "regulatory regions of a gene" to which transcription factors bind, i.e., sequences within a transcription promoter. Page 36, lines 18-21 and page 99, lines 3-8, describes "regulatory elements within the PSA promoter", and discusses whether PDEF interacts with transcription factors that bind the PSA promoter. There is no nexus between these discussions and the claimed invention as it relates to the meaning of a generic "heterologous regulatory sequence" or "regulatory element" associated with a nucleic acid encoding PDEF or a variant of PDEF. Page 27, line 27 to page 28, line 4 does not indicate that the various sequences are considered to be examples of a "regulatory element" or "regulatory sequence". Sequences such as ribosome entry

sites, initiation codons, and termination codons are required elements for transcription or translation to occur, and polyA sequences are required for efficient transcription and stability of the mRNA. These sequences are not commonly referred to in the art as "regulatory" elements or sequences, since transcription and translation rates cannot be *regulated* via these sequences. "Regulatory" sequences or elements are sequences involved in changing the levels of a process, such as transcription or translation rates, in response to a stimulus. It is unclear how Attachments A-D support Applicants arguments other than to illustrate that various sequences elements are included expression vectors, particularly since the only apparent "regulatory" elements or sequences disclosed are promoters that can be regulated or controlled. Applicants arguments as to what the unsupported terms "regulatory sequence" or "regulatory element" mean in terms of specific examples of sequences disclosed in the original specification is an attempt to add description to the specification that was not originally present.

The amendment to claim 154 obviates the additional grounds of rejection applied to this claim, however, the grounds of rejection relating to claim 149 remains.

The separate rejection of claims 137-139 and 141-148 under 35 U.S.C. 112, first paragraph, is withdrawn in view of amended claim 137, which now implicitly requires that the "nucleic acid" and the "nucleotide sequence" encode a fusion protein comprising the recited subsequences of SEQ ID NO: 2.

Claims 24-26, 28, 29, 31, 32, 34, 35, 37, 38, 40, 41, 43-53, 55, 56, 58, 59, 61, 62, 64, 65, 67-74, 105, 107, 109, 111, and 113-120 remain rejected under 35 U.S.C. 112, first paragraph, for the reasons of record set forth in the Office action of 3/16/00, because the specification, while being enabling for a "nucleic acid" that encodes SEQ ID NO: 2 or a fragment of SEQ ID NO: 2 (as recited in the claims), does not reasonably provide enablement for polynucleotides that do not encode SEQ ID NO: 2 or a recited fragment of SEQ ID NO: 2. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims.

The claims are now directed to a polynucleotide that is at least 90% identical to SEQ ID NO: 2 or a recited fragment of SEQ ID NO: 2 which encodes a polypeptide that will bind an antibody that will also bind the polypeptide of SEQ ID NO: 2, i.e. the polypeptide encoded by the polynucleotide shares an antigenic sequence with that of SEQ ID NO: 2. The additional grounds of rejection set forth in the Office action of 4/24/01 have been overcome by amendment. Applicant's arguments directed to the these additional grounds are therefore moot. In addition, the rejection is directed to a lack of enablement only for *using* the claimed polynucleotides commensurate in scope with the amended claims for the reasons of record set forth in the Office action of 3/16/00. No new arguments have been presented traversing these original grounds of rejection.

Double Patenting

Applicant remains advised that should claims 27, 30, 33, 36 and 39 be found allowable, claims 54, 57, 60, 63 and 66 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

Applicant's arguments filed 7/24/01 have been fully considered but they are not persuasive for the reasons of record set forth in the Office action of 8/7/00 in rebuttal to essentially the same arguments advanced by Applicant in the amendment of 7/17/00.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

> A person shall be entitled to a patent unless --
>
> (a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

The following new rejections were necessitated by results obtained in a re-evaluation of the claims using new search parameters in searching the recited sequences.

Claims 24, 28, 29, 43-48, 50, 51, 55, 56, 67-72, 74, 84, 99, 100, 105, 107, 113-118, and 120 are rejected under 35 U.S.C. 102(a) as being anticipated by GenBank Acc. No. AA930371 (Ref. AR12 of IDS filed 2/11/99).

Nucleotides 49-300 of the isolated polynucleotide disclosed in GenBank Acc. No. AA930371 encode an amino acid sequence that differs by only a single amino acid (Ile293Val) from amino acids 248-331 of instant SEQ ID NO: 2, wherein a substitution of two nucleotides would be required for the substitution. Thus, the prior art polynucleotide comprises a nucleic acid: 1) that is 99.2% (250/252) identical to a nucleotide sequence encoding amino acids 248-331 of SEQ ID NO: 2; and 2) that encodes an 84 amino acid sequence 98.8% (83/84) identical to amino acids 248-331 of SEQ ID NO: 2. In addition, nucleotides 22-183 of the isolated polynucleotide disclosed in GenBank Acc. No. AA930371 encode amino acids 238-291 of instant SEQ ID NO: 2. Given the extensive sequence identity, and presence in the amino acid sequence encoded by the prior art polynucleotide of the instantly disclosed (specification, page 25) putative epitopes at amino acids 239-247, 272-280, 279-287, 301-309 and 317-325 of SEQ ID NO: 2, the amino acid sequence encoded by the prior art polynucleotide would clearly bind with specificity to antibodies that recognize SEQ ID NO: 2. Consequently, the prior art polynucleotide meets the limitations of an isolated polynucleotide which comprises the sequences recited in part (b) of claims 24 and 51 and in parts (o) and (p) of claim 84.

The prior art reference also discloses that a vector (pT7T3d-pac) comprising the polynucleotide operably linked to a promoter (either the T3 or T7 promoter flanking the polylinker into which the cDNA was inserted), and a cell comprising the vector.

Allowable Subject Matter

Claims 27, 30, 33, 36, 39, 54, 57, 60, 63, 66, 85-98, 106, 108, 110 and 112 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Certain papers related to this application may be submitted to Art Unit 1632 by facsimile transmission. The FAX number is (703) 308-4242 or 305-3014. The faxing of such papers must conform with the notices published in the Official Gazette, 1156 OG 61 (November 16, 1993) and 1157 OG 94 (December 28, 1993) (see 37 CFR 1.6(d)). NOTE: If applicant *does* submit a paper by FAX, the original copy should be retained by applicant or applicant's representative. NO DUPLICATE COPIES SHOULD BE SUBMITTED, so as to avoid the processing of duplicate papers in the Office.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Scott D. Priebe whose telephone number is (703) 308-7310. The examiner can normally be reached on Monday through Friday from 8 AM to 4 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Karen M. Hauda, can be reached on (703) 305-6608.

Any inquiry concerning administrative, procedural or formal matters relating to this application should be directed to Patent Analyst Patsy Zimmerman whose telephone number is (703) 308-8338. Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0196.

Scott D. Priebe

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